

Claims

- [1] 1. A method of using a write-once disc comprising at least one recording layer, the method comprising:
allocating at least one spare area to a data area of the at least one recording layer;
and
dividing the at least one spare area into a sub spare area and a temporary disc management area,
wherein the size of the temporary disc management area is greater than or equal to $1/N$ (N is a real number) of the size of the spare area.
- [2] 2. The method of claim 1, wherein the size of the temporary disc management area is less than or equal to $1/N$ of the maximum size allocable to the spare area.
- [3] 3. The method of claim 1, further comprising:
extending the sub spare area in the direction opposite to that in which the user data is recorded, to be less than or equal to N times the size of the temporary disc management area.
- [4] 4. The method of claim 1, further comprising:
reducing the sub spare area in the direction in which the user data is recorded.
- [5] 5. The method of claim 1, wherein each spare area is an area in which the user data is re-recorded or updated file system information is recorded when the user data recorded in a user data area has a defect.
- [6] 6. The method of claim 1, wherein the temporary disc management area is an area in which a temporary disc definition structure is recorded.
- [7] 7. The method of claim 1, wherein N is 4.
- [8] 8. A data recording and/or reproducing apparatus comprising:
a recording and/or reading unit which records data on and/or reads data from a write-once disc comprising at least one recording layer; and
a controller which allocates at least one spare area to a data area of the at least one recording layer, divides the at least one spare area into a sub spare area and a temporary disc management area, and controls the recording and/or reading unit to record information on position and/or size of each spare area and information on position and/or size of the sub spare area and the temporary disc management area on the write-once disc,
wherein the controller determines the size of the temporary disc management area to be greater than or equal to $1/N$ of the size of one spare area.

- [9] 9. The data recording and/or reproducing apparatus of claim 8, wherein the controller determines the size of the temporary disc management area to be less than or equal to $1/N$ of the maximum size allocable to one spare area.
- [10] 10. The data recording and/or reproducing apparatus of claim 8, wherein the controller extends the sub spare area in the direction opposite to that in which the user data is recorded, to be less than or equal to N times of the size of the temporary disc management area, and controls the recording and/or reading unit to record information on the size of the extended sub spare area on the write-once disc.
- [11] 11. The data recording and/or reproducing apparatus of claim 8, wherein the controller reduces the sub spare area in the direction in which the user data is recorded, and controls the recording and/or reading unit to record information on the size of the reduced sub spare area on the write-once disc.
- [12] 12. The data recording and/or reproducing apparatus of claim 8, wherein each spare area is an area in which the user data is re-recorded or updated file system information is recorded when the user data recorded in a user data area has a defect.
- [13] 13. The data recording and/or reproducing apparatus of claim 8, wherein the temporary disc management area is an area in which a temporary disc definition structure is recorded.
- [14] 14. The data recording and/or reproducing apparatus of claim 8, wherein N is 4.
- [15] 15. A single recording layer write-once disc on which user data is recorded from the inside out, comprising:
a recording layer which comprises a data area,
wherein the data area comprises:
a spare area which is allocated to an area ranging from a predetermined position of the data area to the last position of the data area and which is divided into a sub spare area and a temporary disc management area from the inside out,
wherein the size of the temporary disc management area is greater than or equal to $1/N$ (N is a real number) of the size of the spare area.
- [16] 16. The single recording layer write-once disc of claim 15, wherein the size of the temporary disc management area is less than or equal to $1/N$ of the maximum size allocable to the spare area.
- [17] 17. The single recording layer write-once disc of claim 15, wherein the sub spare area is an area which is extended inward to be less than or equal to N times the

size of the temporary disc management area.

- [18] 18. The single recording layer write-once disc of claim 15, wherein the sub spare area is an area which is reduced outward.
- [19] 19. The single recording layer write-once disc of claim 15, wherein the spare area is an area in which the user data is re-recorded or updated file system information is recorded when the user data recorded in a user data area has a defect.
- [20] 20. The single recording layer write-once disc of claim 15, wherein the temporary disc management area is an area in which a temporary disc definition structure is recorded.
- [21] 21. The single recording layer write-once disc of claim 15, wherein N is 4.
- [22] 22. A dual recording layer write-once disc comprising:
a first recording layer on which user data is recorded using an opposite track path method; and
a second recording layer which comprises a data area,
wherein an area ranging from a predetermined position of the data area to the last position of the data area is allocated as a spare area which is divided into a sub spare area and a temporary disc management area from the outside in, and the size of the temporary disc management area is greater than or equal to $1/N$ (N is a real number) of the size of the spare area.
- [23] 23. The dual recording layer write-once disc of claim 22, wherein the size of the temporary disc management area is less than or equal to $1/N$ of the maximum size allocable to the spare area.
- [24] 24. The dual recording layer write-once disc of claim 22, wherein the sub spare area is an area which is extended outward to be less than or equal to N times the size of the temporary disc management area.
- [25] 25. The dual recording layer write-once disc of claim 22, wherein the sub spare area is an area which is reduced inward.
- [26] 26. The dual recording layer write-once disc of claim 22, wherein the spare area is an area in which the user data is re-recorded or updated file system information is recorded when the user data recorded in a user data area has a defect.
- [27] 27. The dual recording layer write-once disc of claim 22, wherein the temporary disc management area is an area in which a temporary disc definition structure is recorded.

[28] 28. The dual recording layer write-once disc of claim 22, wherein **N** is 4.